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CONDENSER HEAT REJECTION SYSTEMS

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1. SUMMARY

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During the past reporting period testing of large diameter jet condensers was concluded. Analysis of the data obtained is continuing. Preliminary results obtained for mass flow ratios (liquid to vapor) ranging from 15-50 indicate the measured values of pressure rise to agree to within 20 percent of those predicted by analysis. The maximum value of the ratio of pressure rise to injected liquid dynamic pressure ($\rho_L V_L^2 / 2g$) attained during testing was 12 which occurred at a mass flow ratio of 13. The maximum absolute pressure rise tested was 27 psid which occurred at a mass flow ratio of 49. The latter test run resulted in a value of the ratio of pressure rise to injected dynamic pressure of 1.9

The multi-tube test unit was installed in the 10 KW test loop (Figures 1 and 2) during this period. Shakedown tests were initiated to check performance of newly installed temperature instrumentation and to assist in the formulation of test procedures. Installation of quartz test sections and performance testing will be initiated after completion of the current series of tests.

2. LABOR HOURS

During the period 25 February 1962 to 24 March 1962 a total of 567 labor hours were expended.

3. FUTURE EFFORT

During the next reporting period the following progress is planned:

1. Analysis of large diameter jet condenser data
2. Installation of quartz test sections in the multi-tube unit and initiation of performance testing

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3. Analysis of multi-tube test results

Figure 3 furnishes a comparison of technical effort estimated at the inception of the four month extension with that actually expended.

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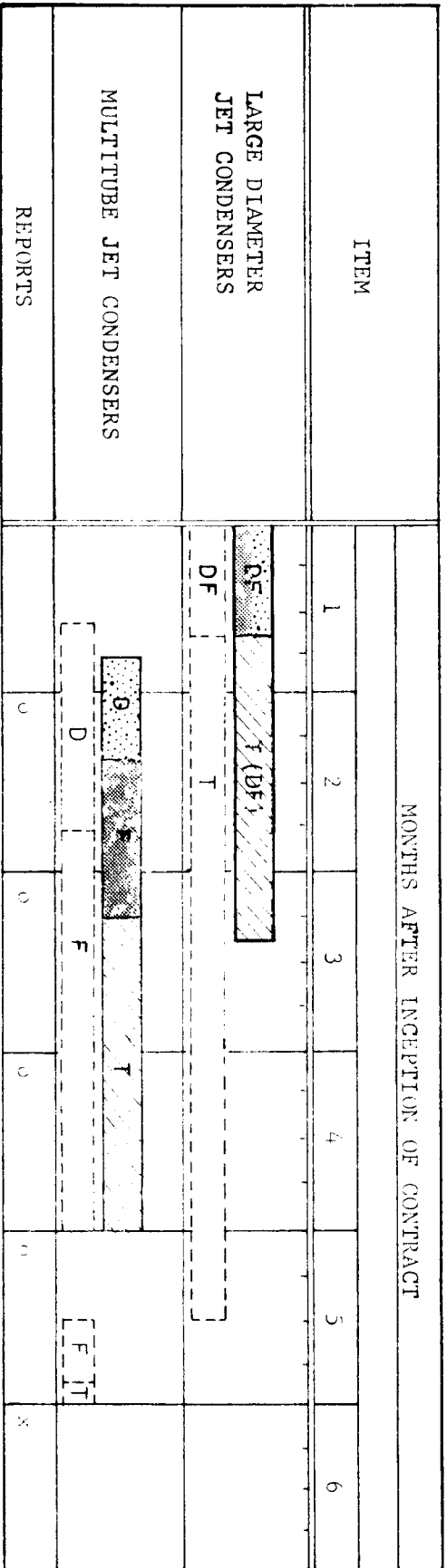
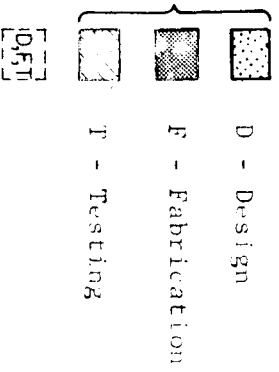


FIG. 3 ESTIMATED TIME SCHEDULE

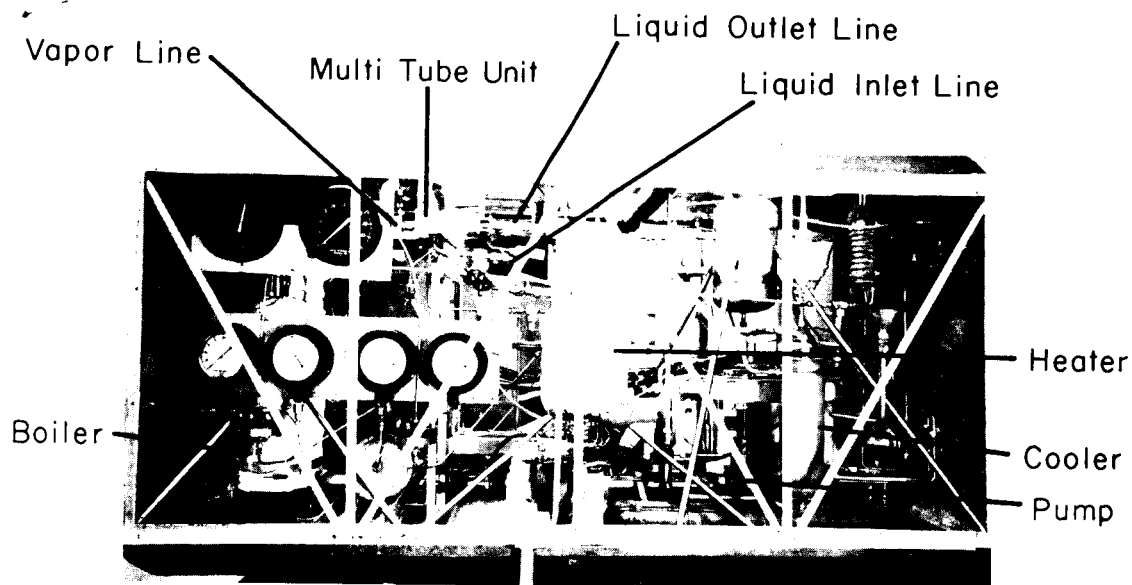


FIG. 1 10 KW TEST LOOP WITH MULTITUBE UNIT INSTALLED

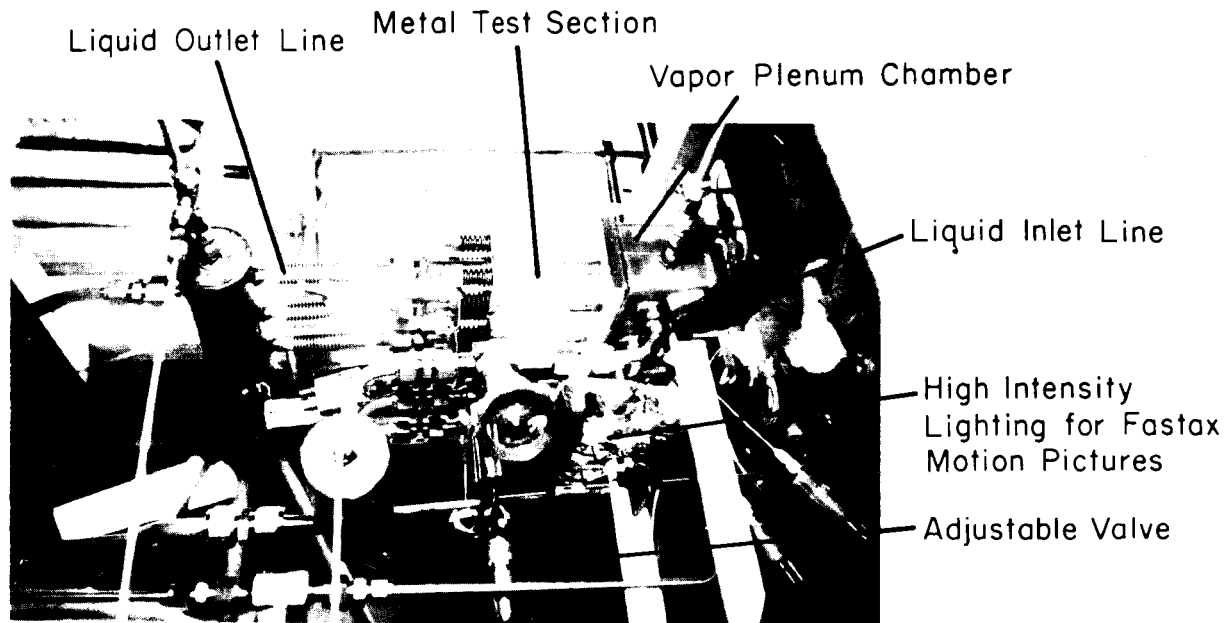


FIG. 2 MULTITUBE TEST UNIT INSTALLED IN 10 KW TEST LOOP